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# **EXHIBIT 5**

KENNETH D. SCHMIDT AND ASSOCIATES  
GROUNDWATER QUALITY CONSULTANTS

PROFESSIONAL EXPERIENCE  
KENNETH D. SCHMIDT

BIRTHPLACE AND DATE

Madera, California on November 8, 1942

DEGREES

B.S. Geology, Fresno State College, Fresno, California (1964)  
M.S. Hydrology, University of Arizona, Tucson, Arizona (1969)  
Ph.D. Hydrology, University of Arizona, Tucson, Arizona (1971)

REGISTRATION AND CERTIFICATION

Geologist No. 1578 in California (1970)  
Geologist No. 23685 in Arizona (1989)  
Geologist No. G462 in Oregon (1978)  
Hydrogeologist No. 176 in California (1995)

SOCIETY MEMBERSHIP

American Water Resources Association (1972)  
American Water Works Association (1970) (Life Member)  
California Groundwater Resources Association (1996)  
Geological Society of America (2006)  
Water Pollution Control Federation (1972)

PROFESSIONAL EXPERIENCE

July 1972 to Present: Principal, Kenneth D. Schmidt and Associates, Groundwater Quality Consultants, Fresno, California.

January 1969 to June 1972: Hydrologist, Harshbarger & Associates, Consultants in Hydrogeology, Tucson, Arizona.

December 1964 to February 1967: Engineering Geologist, Bookman-Edmonston Engineering, Inc., Arvin, California.

As an engineering geologist with Bookman-Edmonston Engineering, Inc. in Arvin from 1964-67, Schmidt's primary duties included hydrogeologic studies associated with the development and operation of two large-scale recharge and groundwater recovery facilities southeast of Bakersfield, California. This experience included the basic aspects of groundwater studies, including preparing a well inventory, water-level measurements, aquifer testing, logging drill cuttings, interpreting geophysical logs, observing well drilling and construction, collecting water

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samples for chemical analyses from hundreds of water supply wells, and data interpretation. He conducted specific studies of land surface subsidence due to groundwater overdrafting and of the occurrence of high boron contents in groundwater north-east of Arvin. Schmidt subsequently completed a Master's thesis (in the hydrology program at the University of Arizona) in 1969 on the boron problem in the Arvin area.

As a hydrologist with Harshbarger & Associates in Tucson from 1969-72, an investigation was conducted on groundwater conditions and potential groundwater development for the City of Fresno. Schmidt's interest in the presence of high nitrate contents in groundwater of the Fresno urban area resulted in the subsequent completion of a Ph.D. dissertation in 1971 (also at the University of Arizona) on that topic. Since that time, he has participated in four master plan updates for the Fresno Metro area and prepared a comprehensive nitrate evaluation for the City of Fresno in 2006.

As the principal of his own consulting firm (Kenneth D. Schmidt & Associates) since 1972, Schmidt has conducted and supervised over a thousand hydrogeologic investigations in the southwest, primarily in Central California. In the early 1970's, he participated in development of the Tulare Lake Basin (south part of the San Joaquin Valley) Water Quality Plan. As part of this project, he developed salt budgets for sub-basins, and evaluated the distribution of chemical constituents such as nitrate and boron in groundwater, and the impacts of irrigation and waste disposal facilities on groundwater quality. In the mid-1970's, Schmidt worked on development of some of the first national guidelines for groundwater quality monitoring for the U.S. Environmental Protection Agency.

By the late 1970's, Schmidt began to design, develop, and implement some of the earliest groundwater quality monitoring programs at specific sites in California. His involvement with a number of these has continued through to the present. Although a fulltime consultant, he has conducted more than a dozen University of California extension classes and other short courses since the late 1970's on groundwater hydraulics, groundwater quality and contamination, and monitoring. Since 1973, he has periodically taught hydrogeology classes at California State University, Fresno.

In 1980, Schmidt began working on a number of projects to develop new public-supply wells in water quality problem areas.



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Included have been hundreds of such wells in high salinity, nitrate, sulfate, arsenic, fluoride, iron, manganese, hydrogen sulfide, methane gas, color, DBCP, EDB, 1,2,3-TCP, and uranium areas of the San Joaquin Valley. His work in this regard for dozens of cities, water utilities, and schools in the San Joaquin Valley has continued through to the present.

From 1985 to 1988, he was a member of the National Academy of Sciences Committee on Irrigation-Induced Water Quality Problems. The committee work focused on agricultural drainage problems, including the San Joaquin Valley. For a number of years following the inception of the U.S. Geological Survey's National Water Quality Assessment Program in the mid-1980's, Schmidt was a member of a national advisory committee for that program. In 1987, he was named the Chairman of the Groundwater Sub-Committee of the Technical Advisory Committee for the San Joaquin Valley Agricultural Drainage Program. From 1992-98, Schmidt was a member of the Industrial Advisory Council in the College of Engineering at the University of Arizona. From 1993-2003 he was a member of the Department Advisory Committee that evaluated the hydrology program at the University of Arizona.

Since the mid-1990's, KDSA has been a leader in groundwater resource and quality evaluations in Central California. The firm has been involved with a number recharge and water banking projects, including: the Arvin-Edison Water Storage District in Kern County, the Semitropic Water Banking Project in the Shafter-Wasco area, the Kern Fan Water Banking Projects west of Bakersfield, the Apex Ranch project southwest of Kingsburg, the Fresno Irrigation District Water Bank, the James Irrigation District project near San Joaquin, and the Madera irrigation District Madera Ranch project. KDSA has worked on numerous other groundwater recharge evaluations, including selection and evaluation of areas favorable for recharge, exploration, and monitoring of existing facilities. KDSA has completed detailed groundwater evaluations for development of Water Management Plans and Water Supply Evaluations in the Cities of Bakersfield, Clovis, Fresno, Madera, Livingston, Tulare, Dinuba, Patterson, Porterville, Selma, and Sanger. KDSA has prepared numerous groundwater sustainability evaluations. Ken Schmidt has also provided expert witness services for numerous litigation cases involving groundwater in the San Joaquin Valley Court. In 2012, he was selected by Judge Wanger of the Federal Court in Fresno to serve as an independent 701 expert on a chromium contamination case near Atwater. KDSA has conducted detailed groundwater studies

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associated with EIRs for numerous gravel mines and rocks quarries in Fresno, Madera, Merced, Tulare, and Stanislaus Counties. During the past two decades, KDSA has designed and implemented enhanced groundwater monitoring programs at dozens of sites, including municipal WWTF, food processing sites, and dairies. The firm specializes in interpretation of groundwater monitoring results. During the past two decades, the firm has worked on hundreds of new deep irrigation wells in the west and south parts of the valley. In 2003 the firm opened a branch office in Bakersfield. During 2007-14, the firm worked on arsenic mitigation programs for the Cities of Hanford and Delano and for the Arvin CSD.

AWARDS

- 1958 Outstanding Achievement Award, California Central Valley Science Fair.
- 1959 Outstanding Laboratory Science Award, Madera Union High School.
- 1977 Best Paper Award, Journal of Groundwater, National Water Well Association.
- 1986 Outstanding Service Award, American Water Resources Association.
- 1995 Distinguished Citizens Award, University of Arizona Alumni Association.
- 1998 Centennial Achievement Award, University of Arizona Alumni Association.
- 2013 Top Dog Award, College of Science & Mathematics, Fresno State Alumni Association.
- 2014 Golden Shovel Award, California State University, Fresno, Earth & Environmental Sciences.

SELECTED CLIENTELE

Cities and Towns

Atwater, Public Works Department  
Bakersfield, Wastewater Division  
Clovis, Public Works Department  
Corcoran, Public Works Department  
Delano, Water Division and Wastewater Division

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Dinuba, Public Works Department  
East Orosi  
Exeter, Water Division and Wastewater Division  
Firebaugh  
Fresno, Public Works Department, Water Division, and Wastewater Division  
Galt  
Gustine  
Hanford, Public Works Department  
Kerman, Public Works Department  
Los Banos  
Lindsay, Public Works Department  
Madera, Public Works Department  
Mammoth CWD (Mammoth Lakes)  
McFarland  
Mendota, Public Works Department  
Modesto, Public Works Department  
Newman  
Patterson  
Porterville  
Reedley, Public Works Department  
Sanger, Public Works Department  
San Joaquin, Water Department  
Santa Clara, Department of Public Works  
Stevinson Ranch  
Sultana  
Tulare, Public Works Department  
Turlock, Public Works Department  
Wasco, Wastewater Division  
Woodlake

Counties

County of Fresno, Departments of Public Works, Planning, and Environmental Health  
County of Madera, Department of Public Works  
County of Merced  
County of Sierra  
County of Tulare, Department of Public Works

Engineering Firms

AECOM, Fresno and Bakersfield  
Alan Mok Engineering, Clovis  
Blair, Church, and Flynn, Clovis  
Carollo Engineers, Fresno and Sacramento  
The H<sub>2</sub>O Group Folsom and Elk Grove  
Dee Jaspar and Associates, Bakersfield



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Fremming, Parsons, & Pechenino, Merced  
GEI (Bookman-Edmonston Engineering), Bakersfield  
Provost & Pritchard Engineering Group, Fresno, Visalia, and  
Bakersfield  
Quad Knopf, Fresno, Visalia, and Bakersfield  
Yamabe and Horn Engineering, Fresno

Farming Entities

ACDF, Inc., Kern County  
Britz Farms, Five Points  
Coleman Farming, Fresno and Madera Counties  
Dalena Farms, Avenal  
Delano Farming, Kern County  
Gary Esajian Farms, Lemoore  
Farmland Management Services, Kern County and Madera County  
Five Points Ranch, Five Points  
Brad Gleason Pleasant Valley  
Grimmway Farms, Kern County  
Harris Ranch, Coalinga  
John Seasholtz Farms  
Kaweah-St. Johns Farmers League  
Lucich Farms, Kern County  
Maricopa Orchards, Kern County  
Mike Woolf Farms  
O'Neill Farming Enterprises, Five Points  
Newton Farms, Stratford  
Paramount Farms, Madera, Kern, and Tulare Counties  
Primex World  
Red Rock Ranch, Five Points  
Gary Robinson, Western Fresno County  
RTS Agribusiness, Kern County  
Schmiederer Farms, Mendota  
Setton Pistachios, Terra Bella  
Starrh Farms, Shafter  
Sun Pacific, Cawelo  
Sun World, Bakersfield  
Ted Sheely Farms, Lemoore  
Triangle T Ranch, El Nido  
James Walker Farms, Fresno  
Westside Harvesting, LLC, Huron  
Woolf Farms, Huron

Industries

California Portland Cement Co., Mojave and Colton  
Central Valley Meat, Hanford  
CIBA GEIGY, Sanger

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Delano Growers Grape Products, Delano  
Dole Fruit & Nut Co., Fresno  
Food Machinery Corporation, San Jose  
Gallo Winery, Fresno and Livingston  
The Garlic Company, Lerdo  
Guardian Glass Plant, Kingsburg  
GWF Power Systems, Inc., Hanford and Kingsburg  
Holly Sugar Co., Tracy and Imperial  
Kraft Foods, Tulare  
Kenetech Alternative Power Systems, Kingsburg  
Pacific Ethanol, Madera  
Rogers Helicopters, Inc., Clovis  
Sperry New Holland, Fowler  
Spreckels Sugar Company, Manteca, Mendota, Salinas, and Woodland  
Sunkist, Tipton  
Sun-Maid Growers of California, Kingsburg and Orange Cove  
Thermo-Electron Energy Systems, Mendota  
Ultra Power, Inc., Kern County  
Valley Perforating Co., Bakersfield

Irrigation Entities

Aliso Water District  
Angiola Water District, Corcoran  
Arvin-Edison WSD, Arvin  
Central California Irrigation District, Los Banos  
Columbia Canal Company, Firebaugh  
Eastside Water District, Stanislaus County  
Firebaugh Canal Water Co. Firebaugh  
Friant Water Users  
James Irrigation District, San Joaquin  
Madera Irrigation District  
North Kern Water Storage District, Cawelo  
Panoche Drainage District  
Pleasant Valley Water District, Coalinga  
Santa Paula Pumpers Association, Santa Paula  
San Joaquin River Exchange Contractors Authority, Los Banos  
Semitropic Water Storage District, Wasco

Mining Companies

Artesia Ready Mix, Lemoncove  
Calavaras Materials, Fresno and Merced Counties  
Granite Construction, Fresno and Madera Counties  
Jaxon Enterprises, Red Bluff  
LeHigh Hanson, LLC-CMI, Kings River and Merced Co.  
Madera Quarry Hildreth Creek  
Madera Sand & Rock, Madera



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Sonora Mining Corporation, Jamestown  
Stewart & Nuss, Fresno  
Vulcan Materials, Centerville, Fresno, Los Banos, and  
Madera County

Private Water Companies

Bakman Water Co., Fresno  
Cal Water Service, Selma and Bakersfield  
Deer Creek Water Co. Terra Bella  
East Niles CSD, Bakersfield  
Greenfield CSD Greenfield  
North of the River MWD, Bakersfield  
Oildale Mutual Water Co., Bakersfield  
Vaughn Water Co., Bakersfield  
West Kern Water District, Taft

Special Districts

Kern County Water Agency, Bakersfield  
Monterey County Flood Control and Water Conservation  
District, Salinas  
Monterey Peninsula Water Management District, Monterey  
Selma-Kingsburg-Fowler County Sanitation District, Kingsburg  
Sierra Valley Groundwater Management District, Sierraville

Publications and Articles

"The Use of Chemical Hydrographs in Groundwater Quality Studies",  
in Hydrology and Water Resources in Arizona and the Southwest,  
vol. 1, Arizona Section AWRA, pp 211-223, 1971.

"Nitrate in Groundwater of the Fresno-Clovis Metropolitan Area,  
California", Ground Water, vol, 10, No. 1, pp 50-64, 1972.

"Groundwater Contamination in the Cortaro Area, Pima County, Arizona",  
in Hydrology and Water Resources in Arizona and the Southwest,  
vol. 2, Arizona Section AWRA, pp 95-111, 1972.

"Groundwater Quality in the Cortaro Area Northwest of Tucson, Arizona",  
Water Resources Bulletin, vol. 9, No. 3, pp 598-606,  
1973.

"Nitrates and Groundwater Management in the Fresno Urban Area",  
Journal AWWA, vol. 66, No. 3, pp 146-148, 1974.

"Regional Sewering and Groundwater Quality in the Southern San

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Joaquin Valley", Water Resources Bulletin, vol. 11, No. 3, pp 514-525, 1975.

"Salt Balance in Groundwater of the Tulare Lake Basin, California", in Hydrology and Water Resources in Arizona and the Southwest, vol. 5, Arizona Section AWRA, pp 177-184, 1975.

"Monitoring Groundwater Pollution", Proceedings of the International Conference on Environmental Sensing and Assessment, Groundwater Section, sponsored by EPA, WHO, and University of Nevada, Las Vegas, Nevada, September 1975, The Institute of Electrical and Electronics Engineers, Inc., vol. 1, session 9, No. 4, pp 1-6, 1976.

"Academic Training for Groundwater Quality Specialists", in Hydrology and Water Resources in Arizona and the Southwest, vol. 6, Arizona Section AWRA, pp 119-123, 1976.

"Monitoring Groundwater Quality: Methods and Costs", U.S. Environmental Protection Agency, Environmental Monitoring Series, Report EPA-600/4-76-023, with L.G. Everett, 1976.

"Monitoring Groundwater Quality: Monitoring Methodology", U.S. Environmental Protection Agency, Environmental Monitoring Series, Report EPA 600/4-76-026, with D.K. Todd, R.M. Tinlin, and L.G. Everett, 1976.

"Monitoring Groundwater Quality: Illustrative Examples", U.S. Environmental Protection Agency, Environmental Monitoring Series, Report EPA 600/4-76-036, with R.M. Tinlin, 1976.

"A Groundwater Quality Monitoring Methodology", Journal AWWA, vol. 68, No. 11, pp 586-593, with D.K. Todd, R.M. Tinlin, and L.G. Everett, 1976.

"Water Quality Variations for Pumping Wells", Ground Water, vol. 15, No. 2, pp 130-137, 1977.

"Protection of Groundwater from Nonpoint Sources of Pollution", Proceedings of Symposium on Drinking Water Quality Enhancement through Source Protection, American Chemical Society, Division of Environmental Chemistry, New Orleans, Louisiana, March 20-25, 1977, Ann Arbor Science Publishers, Inc., pp 257-273, 1977.

"Impact of Land Treatment of Wastewater on Groundwater", Proceedings of National Conference on Environmental Engineering, Kansas City, Missouri, July 10-12, 1978, University of Missouri-Columbia, pp 118-125, 1978.

"Proceedings of Symposium on Establishment of Water Quality Mon-



itoring Programs", Edited by L. G. Everett and K. D. Schmidt, American Water Resources Association, San Francisco, California, June 12, 14, 1978, 370p, 1979.

"The 208 Planning Approach to Groundwater Protection - What is Wrong and What Can be Done About It?", Ground Water, vol. 17, No. 2, pp 148-153, 1979.

"Monitoring Perched Ground Water in the Vadose Zone", in Proceedings of the Symposium on Establishment of Water Quality Monitoring Programs, American Water Resources Association, Minneapolis, Minnesota, pp 134-149, with L.G. Wilson, 1979.

"Groundwater Quality Impact Determined from Well Sampling", Arizona Department of Water Resources, Report No. 1, Proceedings of Deep Percolation Symposium, Scottsdale, Arizona, April 24-25, 1980, pp 74-84.

"Brine Pollution at Fresno - Twenty Six Years Later", Ground Water, vol. 19, No. 1, pp 12-19, with J.A. Krancher and G. Bisel, 1981.

"Hydrogeology of the Sierra Nevada Foothill Lineament Near Oakhurst, California", Ground Water, vol. 19, No. 2, pp 149 - 155, with S. Mack, 1981.

"Persistence of Brine Pollution in Fresno, California Aquifer", Journal Environmental Health, vol. 43, No. 6, pp 314-318, with J.A. Krancher, C.R. Auernheimer, and G. Bisel, 1981.

"Monitoring Groundwater Quality at State Permitted Sites in California", Proceedings of the Thirteenth Biennial Conference on Groundwater, Irvine, California, September 14-15, 1981, California Water Resources Center Report No. 53, pp 87-91, 1981.

"How Representative are Water Samples Collected from Wells?" Proceedings of the Second National Symposium on Aquifer Restoration and Groundwater Monitoring, Columbus, Ohio, May 1982, Water Well Journal Publishing Company, Worthington, Ohio, pp 117-128.

"The Occurrence of Trace Organic Chemical Constituents in Groundwater of the Salt River Valley", Proceedings of the Deep Percolation Symposium, Scottsdale, Arizona, October 1982, Arizona Department of Water Resources Report No. 4, pp 48-58.

"Limitations in Implementing Aquifer Reclamation Schemes", Proceedings of the Third National Symposium on Aquifer Restoration and Ground Water Monitoring, Columbus, Ohio, May 1983, Water Well



Journal Publishing Company, Worthington, Ohio, pp 105-110.

"Groundwater Quality Studies in California", Proceedings of the ASCE Irrigation and Drainage Division Specialty Conference, Jackson, Wyoming July 1983, American Society of Civil Engineers, pp 183-191.

"Management of Groundwater Quality Beneath Irrigated Arid Lands", Proceedings of the Western Regional Conference on Groundwater Management, San Diego, California, October 1983, Water Well Journal Publishing Company, Worthington, Ohio, pp 77-84.

"Developing Groundwater Quality Monitoring Networks in California", Proceedings of the 15th Biennial Groundwater Conference, San Diego, September 23-25, 1985, University of California, Davis, pp 47-51.

"Proceedings of Symposium on Groundwater Contamination and Reclamation", Edited by K.D. Schmidt, American Water Resources Association, Tucson, Arizona, August 14-15, 1985.

"Are Humid Area Monitoring Concepts Applicable to Arid Lands?", Proceedings of Sixth National Symposium and Exposition on Aquifer Restoration and Groundwater Monitoring, May 19-22, 1986, Columbus, Ohio, pp 41-49.

"Hydrologic Aspects of Subsurface Drainage", Proceedings of the 1986 Regional Meetings, U.S. Committee on Irrigation and Drainage, July 30-August 1, 1986, Fresno, Calif., pp 55-64.

"Monitoring Groundwater Quality in the Southwest", American Society of Civil Engineers, Proceedings of Water Forum '86, World Issues in Evolution, August 4-6, 1986, Long Beach, Calif., 6 p.

"DBCP in Groundwater of the Fresno-Dinuba Area, California", National Water Well Association, Proceedings of the Agricultural Impacts on Groundwater Conference, August 11-13, 1986, Omaha, Nebraska, pp 511-529.

"Monitor Well Drilling and Sampling in Alluvial Basins in Arid Lands", National Water Well Association, Proceedings of the FO-CUS Conference on Southwestern Groundwater Issues, October 20-22, 1986, Tempe, Arizona, pp 443-455.

"Effect of Irrigation on Groundwater Quality in the Southwest", Proceedings of the 1986 Regional Meetings, U.S. Committee on Irrigation and Drainage, October 22-24, 1986, Mesa, Arizona, pp 273-290.

"Effect of Irrigation on Groundwater Quality in California",

with I. Sherman, Journal of Irrigation and Drainage Engineering, ASCE, Vol 113, No. 1, 1987, pp 16-29.

"Development of Public-Supply Wells in the Salt River Valley", in Proceedings of the Arizona Hydrological Society 1st Annual Symposium, Phoenix, Arizona, September 1988, pp 131-151.

"Contaminant Hydrology Associated with River Recharge of Sewage Effluent", with D.M. Esposito and D.G. Eaker, in Proceedings of Fourth Symposium on Artificial Recharge of Groundwater in Arizona, Tempe, Arizona, May 23-23, 1989, pp 1-20.

"Developing Integrated Management Strategies for Groundwater Production, Recharge, and Protection in the Salt River Valley", in Proceedings of the Arizona Hydrological Society 2nd Annual Symposium, Casa Grande, Arizona, September 1989.

"Problems with Groundwater Remediation Projects in the Southwest", Proceedings of the Arizona Hydrologic Society 4th Annual Symposium, Casa Grande, Arizona, September 12-13, 1991, pp 3-9.

"Hydrologic Factors Affecting Mobility of Trace Inorganic Constituents", Journal of Irrigation and Drainage Engineering, ASCE, vol. 119, No. 3, 1993, pp 600-612.

"Results of Twelve Years of Groundwater Monitoring at the SKF-CSD Facility in Central California", with D. Michel, Proceedings of the Symposium on Effluent Use Management, American Water Resources Association, Tucson, Arizona, August 29-September 2, 1993, pp 203-212.

"Monitoring Perched Water in Arid Lands", in Handbook of Vadose Zone Characterization and Monitoring, edited by L.G. Wilson, L.G. Everett, and S.J. Cullen, Lewis Publishers, 1995 pp 639-655.

"Groundwater Monitoring Associated with Water Transfer and Banking Projects", Proceedings of the Symposium on Conjunctive Use of Water Resources: Aquifer Storage and Recovery, American Water Resources Association, Long Beach, California, October 19-23, 1997.

"Enhanced Understanding of Aquifer Confinement in the San Joaquin Valley", in Groundwater and Shared Responsibility, Lorman Educational Services, Fresno, California, January 21, 2009, pp 41-66.

"Developing New Public Supply Wells in the San Joaquin Valley",

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in Groundwater and Shared Responsibility, Lorman Educational Services, Fresno, California, January 21, 2009, pp 83-123.

"Aquifer Tests", in Groundwater and Wells: Shared Resources, Lorman Educational Services, Fresno, California, January 21, 2010, pp 37-84.